



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/596,351

06/09/2006

Otto Carlowitz

03100309AA

5548

30743

7590

08/07/2009

WHITHAM, CURTIS & CHRISTOFFERSON & COOK, P.C.  
11491 SUNSET HILLS ROAD  
SUITE 340  
RESTON, VA 20190

EXAMINER

NGUYEN, NGOC YEN M

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

08/07/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/596,351	<b>Applicant(s)</b> CARLOWITZ ET AL.	
	<b>Examiner</b> Ngoc-Yen M. Nguyen	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 13, 14 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 15 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 13-14 and 17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on May 18, 2009.

Applicant's election with traverse of Group I in the reply filed on May 18, 2009 is acknowledged. The traversal is on the ground(s) that the apparatus as disclosed in U.S. Patent 4,940,567 does not describe reducing organosilicon containing exhaust gas. This is not found persuasive because the as stated in the previous office action the "special technical feature" is considered to be the regeneration of the heat storage material and the means to carry out such step is known as evidenced by the '567 patent.

The requirement is still deemed proper and is therefore made FINAL.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2, 15-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, "on-oxygen-containing exhaust gas" should be changed to "non-oxygen-containing exhaust gas"; it is unclear what is required by "removal, purification

Art Unit: 1793

and introduction of the heat storage material bed for removal of the adhesions", it is assumed the heat storage material from a bed is removed and purified to remove the adhesions, however, it is unclear how the "introduction" of the heat storage material can be for "removal of the adhesions"; also, there is no antecedent basis for "the oxidation of the organosilicon compounds"; it is unclear if the step of preheating the exhaust gas as required in claim 1, to any temperature would be sufficient to "thermally" purify the exhaust gas containing organosilicon compounds because there is no other positive process step in the claim for the "thermal purification" of such exhaust gas.

In claim 2, there is no clear antecedent basis for "the regenerative preheating *and cooling*", "the oxidation of the exhaust gas".

In claim 5, it is unclear what is required by "in each case are equipped with..."; it is also what "are connected to a separation apparatus".

In claim 6, there is no antecedent basis for "*the automated* removal, purification and introduction of the heat storage material" and "the individual regenerators".

In claim 7, there is no antecedent basis for "the plant".

In claim 9, there is no antecedent basis for "the regenerators".

In claim 12, there is no clear antecedent basis for "*additionally required energy* is introduced with the aid of admixing of natural gas into the exhaust gas..."

In claim 16, it is unclear what is "it" that contains two or more regenerators.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1793

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-061822 in view of Ohlmeyer et al.

JP '822 discloses a method for treating exhaust gas by heat-storage exhaust-gas treating equipment (note title). The exhaust gas to be treated contains organic silicon (note abstract).

JP '822 teaches that at lower temperature, crystal like silicon adheres easily on the surface of the heat storage element to cause blockade (note paragraph [0008]). Therefore, it is known in the art that in order to prevent the blockade, the heat storage element was cleaned periodically (note paragraph [0009]). The teaching of JP '822 should not be limited to the preferred embodiment of treating the exhaust gas at high temperature to prevent the formation of amorphous clogging oxidation products.

JP '822 discloses that more than one regenerators, which have a heat storage element, can be used to treat the exhaust gas (note the Figure).

It would have been obvious to one of ordinary skill in the art to reuse the heat storage element, after the cleaning step to remove silicon adhesion on the surface of the heat storage element, in order to minimize the cost of fresh heat storage element. The reuse step is considered the same as the claimed "introduction" of the heat storage material.

The difference is JP '822 does not specifically disclose that the heat storage material is used as a bed.

Art Unit: 1793

Ohlmeyer '567 discloses a process and apparatus for continuously pre-heating combustion air and catalytically reducing noxious substances in flue gas by using heat storage elements (note claim 1). The heat storage elements flow down the apparatus that is considered the same as a moving bed. The heat storage elements are continuously removed and passed through a cleaning device (10) and recycled back (note Figure 1 and column 1 6, lines 41-51).

It would have been obvious to one of ordinary skill in the art to use the heat storage element in JP '822 as a moving bed, as suggested by Ohlmeyer '567 so that the heat storage element could be removed continuously to be cleaned and recycled back to the process thereby enabling a continuous process.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner can normally be reached on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1793

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ngoc-Yen M. Nguyen/  
Primary Examiner, Art Unit 1793

nmn  
August 6, 2009